

**ABSTRACT**

The present invention is an enhanced signaling system (ESS) that provides a signaling platform that is independent of the electronics and optical switching and transmission systems. The invention provides controllability on an end-end basis to a concatenation of optical and electronic systems by the service providers and end users.

- 5 Since the present invention enables control over the transport network resources by the end user and service providers, it accelerates the process of service creation and network service expansion. By providing end-end control over the connection, it allows total control of service requirements and QoS. Accordingly, service providers can allocate transport network resources in a dynamic fashion independent of other network users
- 10 (when dedicated wavelengths and resources are allocated), or in conjunction with other users when sharing of transport wavelengths is allowed. By isolating the signaling and transport mechanisms and by providing fabric-independent resource allocation mechanisms, the ESS offers control over end-end resources in a cost effective manner over very short period of time. In one exemplary embodiment of the invention, an
- 15 apparatus for providing signaling for switching and control of transmissions in an integrated optical network includes a plurality of electrical signaling interfaces for receiving requests from external signaling networks and a processing module for processing the requests from the external signaling networks. At least one optical signaling interface is included for coupling to optical components in the integrated optical
- 20 network. The optical signaling interface is operable to transmit processed requests from the processing module for assignment of optical channels for the optical components.